

Dingkang Liang

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PROFILE

I build visual intelligence systems that connect perception, understanding, generation, and embodied decision-making. My current research centers on embodied AI, autonomous driving, scalable world models, and real-world 3D scene reasoning.

3,493

Google Scholar citations

12.6K

GitHub stars

2026

China3DV Rising Star

ACADEMIC APPOINTMENT

Huazhong University of Science and Technology

Assistant Professor

Wuhan, China

Current

EDUCATION

Huazhong University of Science and Technology

Ph.D. in Computer Science; Advisor: Prof. Xiang Bai

Wuhan, China

2022 - 2025

Huazhong University of Science and Technology

M.S. in Computer Science

Wuhan, China

2019 - 2022

Nanjing University of Posts and Telecommunications

B.E.

Nanjing, China

2015 - 2019

SELECTED HONORS

- **China3DV Academic Rising Star Award**, one of six awardees, 2026.
- **National Scholarship**, 2021, 2024, and 2025.
- **ICCV Doctoral Consortium**, selected participant, 2025.
- **Outstanding Paper**, *Science China Information Sciences*, top 3.4%, 2025.
- **ESI Highly Cited Papers**: FIDTM and TransCrowd, top 1% in their academic field.

PROFESSIONAL SERVICE

- **Associate Editor**: *Pattern Recognition*, 2026 - Present.
- **Area Chair / Senior Program Committee**: ECCV 2026; AAAI 2027.
- **Outstanding Reviewer**: ICCV 2023 (top 1.5%); CVPR 2025 and CVPR 2026 (top 6%).
- Reviewer for CVPR, ICCV, ECCV, NeurIPS, ICML, ICLR, AAAI, ICRA, 3DV, TPAMI, TIP, and IJCV.

*Co-first author +Project lead #Corresponding author [Complete publication list](#)

Embodied AI, World Models, and Generative Intelligence

1. **TurboVLA: Real-Time Vision-Language-Action Model at 32 Hz on an RTX 4090 with <1 GB VRAM.**
Hengyi Xie*, Chenfei Yao*, et al., [Dingkang Liang](#)⁺, Xiang Bai, Han Ding. **arXiv 2026**
2. **SimWAM: A Simple World Action Model for End-to-End Autonomous Driving.**
Zongchuang Zhao, Xin Zhou, et al., [Dingkang Liang](#)⁺, Xiang Bai. **arXiv 2026**
3. **ROAD: Reciprocal-Objective Alignment of Discriminative Semantics for 3D Shape Generation.**
Xiao Luo, Mingyang Du, et al., [Dingkang Liang](#)^{+#}. **arXiv 2026**
4. **Towards Generalizable Robotic Manipulation in Dynamic Environments.**
Heng Fang, Shangru Li, Shuhan Wang, Xuanyang Xi, [Dingkang Liang](#)[#], Xiang Bai. **ECCV 2026**
5. **MindDrive: A Vision-Language-Action Model for Autonomous Driving via Online Reinforcement Learning.**
Haoyu Fu, Diankun Zhang, et al., [Dingkang Liang](#)[#], Xiang Bai. **ECCV 2026**
6. **Out of Sight but Not Out of Mind: Hybrid Memory for Dynamic Video World Models.**
Kaijin Chen, [Dingkang Liang](#)⁺, Xin Zhou, Yikang Ding, Xiaoqiang Liu, Pengfei Wan, Xiang Bai. **arXiv 2026**
7. **Seeing the Future, Perceiving the Future: A Unified Driving World Model for Future Generation and Perception.**
[Dingkang Liang](#), Dingyuan Zhang, Xin Zhou, Sifan Tu, Tianrui Feng, Xiaofan Li, Yumeng Zhang, et al. **ICRA 2026**
8. **Generation Models Know Space: Unleashing Implicit 3D Priors for Scene Understanding.**
Xianjin Wu, [Dingkang Liang](#)⁺, Tianrui Feng, Kui Xia, Yumeng Zhang, Xiaofan Li, et al. **ECCV 2026**
9. **When Numbers Speak: Aligning Textual Numerals and Visual Instances in Text-to-Video Diffusion Models.**
Zhengyang Sun*, Yu Chen*, et al., [Dingkang Liang](#)⁺, Xiang Bai[#]. **CVPR 2026**
10. **FVAR: Visual Autoregressive Modeling via Next Focus Prediction.**
Xiaofan Li, Chenming Wu, Jiaming Zhou, et al., [Dingkang Liang](#)[#]. **CVPR 2026**
11. **Cook and Clean Together: Teaching Embodied Agents for Parallel Task Execution.**
[Dingkang Liang](#), Cheng Zhang, Xiaopeng Xu, Jianzhong Ju, Zhenbo Luo, Xiang Bai. **AAAI 2026 Oral**
12. **HERMES: A Unified Self-Driving World Model for Simultaneous 3D Scene Understanding and Generation.**
Xin Zhou*, [Dingkang Liang](#)⁺, Sifan Tu, Xiwu Chen, Yikang Ding, et al. **ICCV 2025**
13. **ORION: A Holistic End-to-End Autonomous Driving Framework by Vision-Language Instructed Action Generation.**
Haoyu Fu, Diankun Zhang, et al., [Dingkang Liang](#)⁺, Chong Zhang, et al. **ICCV 2025**

SELECTED PUBLICATIONS

* Co-first author +Project lead #Corresponding author [Complete publication list](#)

3D Vision and Dense Object Analysis

14. **PointTPA: Dynamic Network Parameter Adaptation for 3D Scene Understanding.**
Siyuan Liu, Chaoqun Zheng, et al., [Dingkang Liang](#)[#], Xiang Bai. **CVPR 2026**
15. **SOOD++: Leveraging Unlabeled Data to Boost Oriented Object Detection.**
[Dingkang Liang](#), Wei Hua, Chunsheng Shi, Zhikang Zou, Xiaoqing Ye, Xiang Bai. **IEEE TPAMI 2025**
16. **Parameter-Efficient Fine-Tuning in Spectral Domain for Point Cloud Learning.**
[Dingkang Liang](#)^{*}, Tianrui Feng^{*}, Xin Zhou^{*}, Yumeng Zhang, Zhikang Zou, Xiang Bai. **IEEE TPAMI 2025**
17. **PointMamba: A Simple State Space Model for Point Cloud Analysis.**
[Dingkang Liang](#)^{*}, Xin Zhou^{*}, Wei Xu, Xingkui Zhu, Zhikang Zou, et al. **NeurIPS 2024**
18. **A Unified Framework for 3D Scene Understanding.**
Wei Xu^{*}, Chunsheng Shi^{*}, Sifan Tu, Xin Zhou, [Dingkang Liang](#)⁺, Xiang Bai. **NeurIPS 2024**
19. **Dynamic Adapter Meets Prompt Tuning: Parameter-Efficient Transfer Learning for Point Cloud Analysis.**
Xin Zhou^{*}, [Dingkang Liang](#)^{*}, Wei Xu, Xingkui Zhu, Yihan Xu, et al. **CVPR 2024**
20. **Make Your ViT-based Multi-view 3D Detectors Faster via Token Compression.**
Dingyuan Zhang^{*}, [Dingkang Liang](#)^{*}, Zichang Tan, Xiaoqing Ye, Cheng Zhang, et al. **ECCV 2024**
21. **A Simple Vision Transformer for Weakly Semi-supervised 3D Object Detection.**
Dingyuan Zhang^{*}, [Dingkang Liang](#)^{*}, Zhikang Zou^{*}, Jingyu Li, Xiaoqing Ye, et al. **ICCV 2023**
22. **CrowdCLIP: Unsupervised Crowd Counting via Vision-Language Model.**
[Dingkang Liang](#)^{*}, Jiahao Xie^{*}, Zhikang Zou, Xiaoqing Ye, Wei Xu, Xiang Bai. **CVPR 2023**
23. **An End-to-End Transformer Model for Crowd Localization.**
[Dingkang Liang](#), Wei Xu, Xiang Bai. **ECCV 2022**
24. **Focal Inverse Distance Transform Maps for Crowd Localization.**
[Dingkang Liang](#), Wei Xu, Yingying Zhu, Yu Zhou. **IEEE TMM 2023**
25. **TransCrowd: Weakly-Supervised Crowd Counting with Transformers.**
[Dingkang Liang](#), Xiwu Chen, Wei Xu, Yu Zhou, Xiang Bai. **SCIS 2022**
26. **AutoScale: Learning to Scale for Crowd Counting.**
Chenfeng Xu^{*}, [Dingkang Liang](#)^{*}, Yongchao Xu, Song Bai, Wei Zhan, Xiang Bai, Masayoshi Tomizuka. **IJCV 2022**

SELECTED COMPETITION RESULTS

- **1st Place**, AI City Challenge, Multi-Camera 3D Perception Track, ECCV 2026.
- **2nd Place**, SoccerNet Monocular Depth Estimation Challenge, CVPR 2025.
- **1st Place**, FishNet Classification Challenge, ECCV 2024; **2nd Place**, Dataset Distillation Challenge, ECCV 2024.
- **1st Place**, VisDrone Crowd Counting Track, ECCV 2020 and ICCV 2021.
- **Two 1st-Place Finishes**, CV101 Crowd Counting and OpenVINO Tracks, 2019 (RMB 180,000 total prize).